

WHAT IS CLAIMED IS:

1. A method of strengthening members of a tower, comprising the steps of:
providing a tower including at least one tower member;
providing at least one reinforcing member;
applying structural adhesive to at least one of the at least one tower member and the at least one reinforcing member;
placing the at least one reinforcing member against the at least one tower member;
curing the structural adhesive to thereby permanently attach the at least one reinforcing member to the at least one tower member; and
securing the at least one reinforcing member to the at least one tower member while the structural adhesive is curing.
2. A method as defined in claim 1, wherein the step of securing includes applying bolts to the at least one reinforcing member and the at least one tower member.
3. A method as defined in claim 2, further including the step of removing the bolts from the at least one reinforcing member and the at least one tower member after the structural adhesive is cured.
4. A method as defined in claim 1, wherein the tower has a polygonal monopole configuration.
5. A method as defined in claim 1, wherein the step of applying includes placing the structural adhesive onto the at least one reinforcing member.
6. A method as defined in claim 1, wherein the step of applying includes placing the structural adhesive onto the at least one tower member.

7. A method as defined in claim 1, further including the step of introducing a spacer interposed between the at least one tower member and the at least one reinforcing member prior to the step of placing.

8. A method as defined in claim 7, wherein the step of introducing a spacer includes mixing glass beads into the structural adhesive.

9. A method as defined in claim 7, wherein the spacer is fabricated from a material including one of plastic, string, and metal.

10. A method as defined in claim 1, further including the step of preparing the at least one tower member for receiving the structural adhesive by one of sanding, sandblasting, and chemical washing.

11. A method as defined in claim 1, further including the step of preparing the at least one reinforcing member for receiving the structural adhesive should the at least one reinforcing member have a galvanizing layer.

12. A method as defined in claim 11, wherein the step of preparing the at least one reinforcing member includes one of cleaning, etching, and removing the galvanizing layer.

13. A method as defined in claim 12, wherein the cleaning, etching, and removing is accomplished by one of chemical and abrasive means.

14. A method as defined in claim 12, wherein the step of preparing the at least one reinforcing member further includes applying a primer.

15. A tower reinforcement system comprising:
a tower including at least one tower member;
at least one reinforcing member coupled to the at least one tower member by structural adhesive; and

at least one elongated fastener to secure the at least one reinforcing member to the at least one tower member while the structural adhesive is curing.

16. A tower reinforcement system as defined in claim 15, wherein the at least one elongated fastener includes bolts.

17. A tower reinforcement system as defined in claim 15, wherein the at least one reinforcing member includes a flat plate reinforcement.

18. A tower reinforcement system as defined in claim 15, wherein the at least one reinforcing member includes a channel reinforcement.

19. A tower reinforcement system as defined in claim 15, wherein the at least one reinforcing member includes a structural tube reinforcement.

20. A tower reinforcement system as defined in claim 19, wherein the at least one elongated fastener includes a bolt to be secured to an outside of the structural tube reinforcement.

21. A tower reinforcement system as defined in claim 19, wherein the at least one elongated fastener includes a bolt to be secured to an inside of the structural tube reinforcement.

22. A tower reinforcement system as defined in claim 15, further including a spacer interposed between the at least one reinforcing member and the at least one tower member.

23. A tower reinforcement system as defined in claim 22, wherein the spacer is made from a material including one of plastic, string, and metal.

24. A tower reinforcement system as defined in claim 22, wherein the spacer includes glass beads mixed with the structural adhesive.

25. A tower reinforcement system as defined in claim 15, wherein the at least one reinforcing member is fabricated from a material including one of a metal, and a fiber reinforced polymer.

26. A tower reinforcement system as defined in claim 25, wherein the metal includes steel.

27. A tower reinforcement system as defined in claim 25, wherein the fiber reinforced polymer includes carbon fibers encapsulated in a resin matrix.

28. A tower reinforcement system as defined in claim 15, wherein the at least one tower member is fabricated from a material including metal.

29. A tower reinforcement system as defined in claim 28, wherein the metal includes steel.